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IS 14291 (1995): Textiles - Shoddy woollen yarn-specification [TXD 4: Wool and Wool Products]

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भारतीय मानक

वस्त्रादि — ऊनी शाडी धागे — विशिष्टि

Indian Standard

TEXTILES — WOOLLEN SHODDY YARN — SPECIFICATION

UDC 677.318.072.32

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BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

July 1995

Price Group 2

Wool and Wool Products Sectional Committee, TX 04

FOREWORD

This Indian Standard was adopted by the Bureau of Indian Standards, after the draft finalized by the Wool and Wool Products Sectional Committee had been approved by the Textile Division Council.

Shoddy yarn is spun from wool or blend of wool and man-made fibres recovered from rags and is mainly used for making blankets.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Indian Standard

TEXTILES — WOOLLEN SHODDY YARN — SPECIFICATION

1 SCOPE

1.1 This standard prescribes the requirements of woollen shoddy yarn spun on woollen system from wool fibres or blends of wool with man-made fibres.

1.2 This standard does not cover general appearance, feel, shade and type of finish (*see also* **6**).

2 REFERENCES

Indian Standards listed in Annex A are necessary adjuncts to this standard.

3 TERMINOLOGY

For the purpose of this standard, the definitions given in IS 11206 : 1984 shall apply.

4 MANUFACTURE

4.1 The shoddy yarn shall be spun on woollen system. The yarn shall be evenly spun and uniformly twisted.

NOTE — As far as possible, the wool fibre used for spinning yarn shall not be coarser than 30 µm.

4.2 The yarn shall be reasonably free from snarls, slubs, loose ends, odd, knots, knots with long tails, stains, burrs, etc. However, one knot per kg of shoddy yarn shall be permissible.

5 REQUIREMENTS

5.1 The yarn shall conform to the requirements given in Table 1.

5.2 Wool Content

5.2.1 Wool content of the yarn shall be as agreed or as declared by the manufacturer subject to a minimum of 51 percent. However, a tolerance of ±3 shall be permitted on the declared/agreed percentage of wool content.

5.2.2 Percentage of various fibres in the yarn shall be determined by the methods given in IS 1564 : 1988, IS 2005 : 1988, IS 2006 : 1988, IS 2176 : 1988, or IS 3421 : 1988. Before making the quantitative chemical analysis, the fibres present in the yarn shall be first identified according to the method prescribed in IS 667 : 1981.

6. SEALED SAMPLE

6.1 If in order to illustrate or specify indeterminable characteristics, such as general appearance, shade, feel and type of finish, a sample has been agreed upon and sealed, the supply shall be in conformity with the sample in such respects.

6.2 The custody of the sealed sample shall be a matter of prior agreement between the buyer and the seller.

7 MARKING

7.1 Each package (bale/case) shall be marked with the following:

a) Count of yarn,
b) Indication of the source of manufacture,
c) Wool content,
d) Dye-lot number and manufacturer's shade number, and
e) Mass of each package.

7.2 BIS Certification Marking

The product may also be marked with Standard Mark.

7.2.1 The use of the Standard Mark is governed by the provisions of Bureau of Indian Standards Act, 1986 and the Rules and Regulations made thereunder. The details of conditions under which the licence for the use of Standard Mark may be granted to manufacturers or producers may be obtained from the Bureau of Indian Standards.

8 PACKING

8.1 The shoddy yarn shall be wound in the 80 mm of cheeses or cones. Suitable number of such cheeses and cones containing yarn of same blend composition, count, colour and dye-lot number and having the same finish shall be packed together.

8.2 The yarn shall be packed in accordance with the procedure laid down in IS 2518 : 1964 or IS 3353 : 1966.

Table 1 Requirements of Woollen Shoddy Yarn

(*Clause* 5.1)

Sl No.	Characteristic	Requirement	Method of Test
(1)	(2)	(3)	(4)
i)	Linear density [universal count in tex (*see* Note 1)	As agreed or declared subject to a tolerance of ± 5 percent	IS 681 : 1964
ii)	Balance of twist (*see* Note 2)	No undue tendency to retwist; however a maximum of 8 turns as double or retwist may be permitted	Approximately 1.5 m of yarn is taken out from the conditioned package and is held horizontally in the two hands and the two ends are slowly brought together keeping them about 10 cm away
iii)	Lea strength, N, *Min* (20 m lea)	200	B-1
iv)	Scouring loss, percent, *Max*	8	B-2
v)	Mass	As declared or marked	IS 4902 : 1981
vi)	*p*H value:		IS 1390 : 1983
	a) All wool yarn	4.0 to 7.5	
	b) Blended yarn	5.0 to 7.5	
vii)	Colour fastness to :		
	a) Light (*see* Note 3)	4 or better	IS 686 : 1985 or IS 2454 : 1985
	b) Washing : Test 1		IS 687 : 1979
	1) Change in colour	3 or better	
	2) Staining of adjacent fabric	do	
	c) Dry-cleaning	4 or better	IS 4802 : 1988
	d) Milling		
	1) Acidic	3 or better	IS 981 : 1988
	2) Alkaline	do	IS 983 : 1980

NOTES

1 The common counts of shoddy yarn are 2 Nm to 12 Nm (80 to 500 tex).

2 Although the twist factor is not specified, the twist shall be so balanced as to give a straight line appearance to the surface of the yarn.

3 In case of dispute, colour fastness to light shall be determined by the method prescribed in IS 686 : 1985.

9 SAMPLING

9.1 Lot

A consignment of shoddy yarn of same count manufactured from the same lot of wool fibres or blend and delivered to the buyer against a despatch note shall constitute a lot.

9.2 The conformity of the lot to the requirements of this standard shall be determined on the basis of the tests carried out on the samples selected from it.

9.3 Unless otherwise agreed to between the buyer and the seller, the number of bales or cases of yarn to be selected at random from a lot shall be as given in Table 2.

Table 2 Sample Size

Lot Size (Bales or cases)	Sample Size
Up to 15	2
16 to 25	3
26 to 100	5
101 and above	8

9.4 The number of packages to be selected from each bale or case selected according to **9.3** shall be 5. The number of test specimens to be prepared from each package shall be such that atleast 20 test specimens are available for carrying out the tests for linear density, lea strength, balance of twist and mass. A composite sample be prepared out of test specimens and the same shall be tested for scouring loss, *p*H value of aqueous extract, wool content, colour fastness tests in case of dyed yarn.

9.5 Criteria for Conformity

The lot shall be considered conforming to the requirement of this standard if the following conditions are satisfied:

a) Linear density, lea strength, balance of twist and mass of test sample shall satisfy the requirements as given in Table 1.

b) *p*H value of aqueous extract, scouring loss, colour fastness to light, washing, dry cleaning and milling of the test specimen shall satisfy the requirement given in Table 1.

ANNEX A

(*Item* 2)

LIST OF REFERRED INDIAN STANDARDS

IS No.	*Title*
667 : 1981	Methods for identification of textile fibres (*first revision*).
681 : 1964	Methods for determination of universal count of woollen and worsted yarn.
686 : 1985	Methods for determination of colour fastness of textile materials to daylight (*first revision*).
687 : 1979	Method for determination of colour fastness of textile materials to washing : Test 1 (*second revision*).
981 : 1988	Method for determination of colour fastness of textile materials to acid milling (*first revision*)
983 : 1980	Method for determination of colour fastness of textile materials to alkaline milling (*first revision*)
1390 : 1983	Methods for determination of *p*H value of aqueous extracts of textile materials (*first revision*)
1564 : 1988	Method for quantitative chemical analysis of binary mixtures of cellulose triacetate and certain other fibres (*first revision*)
2005 : 1988	Methods for quantitative chemical analysis of binary mixtures of nylon 6 or nylon 6.6 fibres and certain other fibres (*first revision*)
2006 : 1988	Method for quantitative chemical analysis of binary mixtures of protein fibres with certain other non-protein fibres (*second revision*)
2176 : 1988	Textile — Binary mixtures of cellulose acetate and certain other fibres — Methods for quantitative chemical analysis (*first revision*)
2454 : 1985	Methods for determination of colour fastness of textile materials to artificial light (Xenon lamp) (*first revision*)
2518 : 1964	Code for seaworthy packaging of wool hosiery yarn and goods
3353 : 1966	Code for inland packaging of wool hosiery yarn and goods
3421 : 1988	Textiles — Binary mixtures of acrylic, modacrylics and certain other fibres — Method for quantitative chemical analysis (*first revision*)
4802 : 1988	Method for determination of colour fastness of textile materials to dry-cleaning (*first revision*)
4902 : 1981	Method for determination of correct invoice weight of all wool materials (*first revision*)
11206 : 1984	Glossary of textile terms — Wool and other animal fibres, their processing and products

ANNEX B

(*Table* 1)

METHODS OF TEST

B-1 METHOD OF TEST FOR LEA STRENGTH

B-1.1 Principle

A test skein is broken on a tensile testing machine and breaking strength is observed.

B-1.2 Apparatus

B-1.2.1 *Reel*

A hand or motor driven reel, having a perimeter of one metre. This reel shall be fitted with a traverse machanism that will space the yarn evenly on the reel in not more than two layers and an indicator of the length wound. A warning bell or an automatic cut off device that will operate at the specified number of turns is desirable.

B-1.2.2 *Tensile Testing Machine*

A constant rate of traverse or constant rate of extension testing machine of sufficient capacity to break the test skeins.

B-1.3 Preparation of Test Skein

Draw end of a yarn through a guide attached to the reel. Turn the reel at a uniform rotational frequency and maintaining sufficient tension to lay the yarn smoothly on the reel. When 20 number of turns have been reeled, tie the ends of the yarn together with a non-slipping knot. For easier separation of skeins on the rack, a loose loop may be made once again knotted.

B-1.4 Tensile Testing

Transfer the skein separately to the testing machine without twisting the skein or allowing it to collapse. Mount the skein in such a manner that it lies as a flat ribbon on the spools provided in the tensile testing machine. Break the skein and record the breaking strength to the nearest 1 N.

B-1.4.1 Repeat the test on other specimens and calculate the average skein breaking strength from the observed values.

B-2 METHOD FOR DETERMINATION OF SCOURING LOSS

B-2.1 Test Specimen

Take about 10 g of yarn from each sample. This shall constitute the test specimen.

B-2.2 Procedure

B-2.2.1 Dry the test specimen to constant mass inthe drying oven at 105 ± 3°C temperature and determine its mass accurately (*see* Note).

NOTE — Constant mass shall be deemed to have been reached if the difference between the two successive weighings at an interval of 20 minutes is less than 0.05 percent.

B-2.2.2 Extract the specimen with a mixture of benzene and methyl alcohol in the proportion of 3 : 2 in a Soxhlet apparatus for 4 hours at the rate of 5 extractions per hour, by placing the specimen in a thimble and covering it with cotton-wool previously extracted with the above stated mixture of benzene and methyl alcohol in the proportion of 3 : 2. Distill off the solvent from the extract. Dry the residue to a constant mass (*see* Note under **B-2.2.1**) at 105 ± 3°C and determine the mass accurately.

B-2.3 Calculation

B-2.3.1 Calculate the scouring loss by the following formula:

$$\text{Scouring loss, percent} = \frac{100 \times a}{b}$$

where

a = mass of the dry residue (*see* **B-2.2.2**), and

b = mass of the test specimen (*see* **B-2.2.1**).

B-2.3.2 Repeat the test with the remaining test specimens.

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